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INTERNATIONAL PRELIMINARY EXAMINATION REPORT PCT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference W/2AO35/MT-26	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA416)	
International application No. PCT/NL 03/00638	International filing date (day/month/year) 15.09.2003	Priority date (day/month/year) 13.09.2002
International Patent Classification (IPC) or both national classification and IPC B66F3/46		
Applicant STERTIL B.V.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 7 sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 25.03.2004	Date of completion of this report 13.12.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Sheppard, B Telephone No. +31-70 340-3662 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/NL 03/00638**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

Description, Pages

4-12 as originally filed
1-3, 3a filed with telefax on 22.11.2004

Claims, Numbers

1-9 filed with telefax on 22.11.2004

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/NL 03/00638**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

see separate sheet

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-9
	No: Claims	
Inventive step (IS)	Yes: Claims	7
	No: Claims	1-6,8,9
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item I

Basis of the report

The amendments to the description submitted with the telefax of 22nd November 2004 were submitted on pages numbered 1, 2, 3 and 4. According to the page numbered 4, the text of original page 4 from line 35 is to be retained. The amended page numbered 4 has therefore been considered to be page "3a".

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1) Documents

Reference is made to the following documents:

D1: US-B1-6315079

D2: WO-A-9219527

2) Inventive Step

The document D1 discloses (the references in parentheses applying to this document):

System for lifting and lowering an object, such as a vehicle (4), comprising a group of at least two mobile lifting columns (2; I,II,III,IV,V,VI), each lifting column comprising: a displaceable frame (8) with a standing mast part (6); a carrier (7) displaceable along the mast part for engaging the object to be lifted; a drive (10) for moving the carrier along the mast part; a control (14) for controlling at least the drive; communication means communicating with at least other lifting columns in the group via a transmission or broadcast path (3), where at least one of the lifting columns in the group comprises selectively user operable selection means (18) for, when actuated, selecting any of the lifting columns from the group for a sub-group.

2.1) Further it is clear from D1 that a group or sub-group of columns can be operated from any of the selection means (18) to operate other columns either with the column on which the selected means is mounted or separately. As the selection means operated is sending the commands to other lifting columns in the group it is by definition a master unit, the other column(s) being slaves.

2.2) D1 is therefore considered to further disclose that communications in the system are, at least during selection of said at least one lifting column for the sub-group, based on master-slave principles, and a selected lifting column is the master column.

2.3) The subject-matter of claim 1 therefore differs from this known system in that the selected lifting column being the first selected column for a sub-group, is as a result of first selection thereof a master lifting column. In other words, the act of selecting a particular column first makes that column the master column.

2.4) The subject-matter of independent claim 1 is therefore new (Article 33(2) PCT).

2.5) The problem to be solved by the present invention may therefore be regarded as one of providing an alternative group selection process.

2.6) The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

2.7) The feature of selecting a particular column first to select that column as the master column is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed.

2.8) Dependent claims 2-9 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, the reasons being as follows:

2.9) Claim 2. The additional features of this claim relate to the choice of which lifting column is selected as the master column for each group. Each group must obviously have a master in order to insure coordination of the columns, and in view of this fact, the skilled person would regard it a normal design procedure to combine all the features set out in claim 2. Thus, the subject-matter of claim 2 does not involve an inventive step and does not satisfy the criterion set forth in Article 33(3) PCT.

2.10) Claim 3. The feature of wireless communication for control of multiple lifting columns, as indicated for example in D2, page 2, lines 11-15, is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed.

2.11) D1 discloses that any of the columns can be selected to be lifted (or not to be lifted) by programming. It is implicitly disclosed that the new selection instructions overwrite (i.e. cancel) the previous selection instructions. The subject-matter of

dependent claim 4 is therefore also not new (Article 33(2) PCT).

2.12) Claim 5. The additional features of this claim relate to a display of which columns are part of which group, and means for selecting which columns within the groups are slaves. These features are implicitly disclosed in D1 (see column 3, lines 29-56). Thus, the subject-matter of claim 5 does not involve an inventive step and does not satisfy the criterion set forth in Article 33(3) PCT.

2.13) Claim 6. The additional features of this claim relate to the identity of each column. These features are disclosed in D1 (see column 3, lines 36-50). Thus, the subject-matter of claim 6 does not involve an inventive step and does not satisfy the criterion set forth in Article 33(3) PCT.

2.14) Claim 8. In claim 8 a slight constructional change in the system of claim 6 is defined which comes within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen. Consequently, the subject-matter of claim 8 also lacks an inventive step.

2.15) Independent claim 9 discloses a method corresponding to the apparatus claim 1, and for the reasons given in points 2.1 to 2.7 above, the subject matter of this claim does not involve an inventive step

2.16) Document D1, which is considered to represent the most relevant state of the art, discloses a system from which the subject-matter of claim 7 differs in that, in addition to the features indicated in point 2.3 above, the identity of the slave column can be read from an identification card associated with the master column

2.17) The problem to be solved by the present invention may therefore be regarded as preventing operation of a slave column with the wrong master column.

2.18) The solution to this problem proposed in claim 7 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

2.19) The combination of the features of dependent claim 7 is neither known from, nor rendered obvious by, the available prior art, nor would it be obvious to the skilled man to apply these features in order to solve the above problem.

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Enc. with our letter of November 22, 2004

SYSTEM WITH LIFTING COLUMNS

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The present invention relates to a system with lifting columns for lifting and lowering an object, such as a vehicle, and more particularly a car, bus, truck or the like, as set out in the pre-characterising portion of claim 1.

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In the systems, that are known from e.g. US-6.315.079, the lifting columns are disposed displaceably on a workshop floor, and over the workshop floor are arranged the cables that are required for electric power supply to the drive and control of the lifting columns, as well as

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conductors for mutual contact between the controls of the individual lifting columns.

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Therein, an energy source such as wall sockets have to be available at the workshop floor. Also, the cables from, to and between the lifting columns are often in the way on the workshop floor, wherein people can trip over them, which can cause a hazardous situation. Further, when the setup or configuration of the individual lifting columns has to be changed, all cabling has to be disconnected, where-after the lifting columns can be displaced to the desired positions

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thereof, followed by reconnection of all cables for energy supply and for mutual contact. The couplings can be damaged as a result of frequent disconnection of the cabling for a new setup or because of the danger of someone stumbling over the cables and thereby disconnecting the cables, after which the cables have to be replaced and work on the workshop floor has to be interrupted until new cables are in place. When couplings are damaged or couplings which have merely been pulled out, failure of the system could occur which could

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then in turn result in a hazardous situation for the users of the system. The position of a lifting column in the known system is, through physical connection thereof with a socket, determined by the identification or address of the socket, rather than the lifting column itself.

Such systems are also known from for example WO 92/19.527, wherein radiographic communication means can be employed. Such communication can remedy some of the drawbacks mentioned above, but the disclosure of this document is restricted to deployment of a single fixed group of columns, and communication can, in use of the system for lifting objects, be useful in said use. However, prior to or in the course of this use, the system requires set-up or re-configuration of the individual lifting columns in the system, as noted above. Without the sockets of a cable based system, assigning an address or identification to a desired one of the lifting columns is a severe problem, that is according to the disclosure of WO 92/19.527 avoided with a system comprising a group of a fixed number of predetermined lifting columns. However, for many applications more flexibility is desired, for instance when adding or removing lifting columns to or from a subgroup, that is actually used for lifting different objects, such as vehicles of varying size.

The present invention has for its object to provide a much more flexible system, for which purpose there is provided a system according to the present invention as defined in claim 1 in its entirety.

An unambiguous selection can thus be made in very specific manner for each specific lifting column or those lifting columns into a sub-group - which could be as large as the entire group, but is usually smaller - that are required for lifting and lowering the object to be lifted. It is

possible with such a system according to the invention to freely select lifting columns for a sub-group having therein a number of lifting columns which suffices to handle an object for lifting and lowering, in particular a vehicle, in the desired manner. The other lifting columns are then out of use or can be employed in or assigned to an additional sub-group for special functions, such as engaging the wheels on a wheel axle which has to be disassembled, wherein the lifting columns in the sub-group for engaging these wheels on this wheel axle are lowered sooner, after disassembly or disconnection of the relevant wheel axle, than the other lifting columns which must then still support the rest of the vehicle or object.

The lifting columns in a sub-group are preselected (prior to handling a vehicle or object). Use can be made for this purpose of a master column which can be chosen at random from the available group of lifting columns, or a predetermined number of master columns, which are identifiable as such, can be provided in the system. The other lifting columns of the group can then be designated as slave columns. In one embodiment with identifiable predetermined master columns, the number of sub-groups is determined by the number of master columns. In other embodiments, wherein a lifting column to be chosen at random from the group can be used as master column, as many sub-groups can be formed as there are lifting columns in the group, or the sub-group can include all lifting columns of the group itself. It will be apparent that a high degree of flexibility can be hereby achieved.

In a system according to the invention communications in the system are, at least during selection of said at least one lifting column for the sub-group, based on master-slave principles, and a selected lifting column,

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- being the first selected column for a sub-group, is as a result of first selection thereof a master lifting column. In such a configuration the selection process takes place during set-up or re-configuration of the system. By ensuring that
- 5 the first selected lifting column will be the master in the subsequent communications for set-up or re-configuration, the subsequent steps in the process can to a large extent be automated. Also, since in such a system usually more than one slave is employed, starting the selection process with the
- 10 master is convenient and reduces complexity thereafter. The other lifting columns are then automatically, upon their selection, slaves and will identify themselves as such, and their availability for selection, to the master. The order in which the remaining lifting columns, that are required for
- 15 the sub-group and the application of that sub-group, sign-on to the sub-group in general, and identify themselves to the master, can favourably be employed to also assign an address to these lifting columns.
- 20 SEE FURTHER PAGE 4, FROM LINE 35 OF THE PRESENT APPLICATION AS ORIGINALLY FILED.

PCT/NL03/00638

Enc. with our letter of November 22, 2004

CLAIMS

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1. System for lifting and lowering an object, such as a vehicle, comprising a group of at least two mobile lifting columns, each lifting column comprising: a displaceable frame with a standing mast part; a carrier displaceable along the mast part for engaging the object to be lifted; a drive for moving the carrier along the mast part; a control for controlling at least the drive; and communication means communicating with at least other lifting columns in the group via a transmission or broadcast path, wherein at least one of the lifting columns in the group comprises selectively user operable selection means for, when actuated, selecting any of the lifting columns from the group for a sub-group, characterised in that communications in the system are, at least during selection of said at least one lifting column for the sub-group, based on master-slave principles, and a selected lifting column, being the first selected column for a sub-group, is as a result of first selection thereof a master lifting column.

2. System according to claim 1, wherein at least one slave column, being a slave column during at least selection, comprises operating means for combined actuation of the lifting columns in the sub-group of selected lifting columns in operation during lifting of the object.

3. System according to claim 2, wherein the communication means are of a wireless, such as radiographic, type for contact with the control of the lifting column.

4. System as claimed in one of the foregoing claims, wherein the selection means of the master column are adapted

to transmit a delete signal, at the beginning of the selection process, to at least one other lifting column or to those lifting column(s) which was or were selected at an earlier stage with the relevant master column in a sub-group,
5 in order to cancel the previous selection thereof.

5. System as claimed in claim 4, wherein the selection means of the master column gives to a user an indication of each lifting column available for selection in the sub-group, and comprise associated selectors for selecting lifting
10 columns for the sub-group to be selected as slave columns.

6. System as claimed in at least claim 1, wherein the selection means of a slave column are adapted to read and adopt an identification for the purpose of selecting the slave column in a sub-group associated with the master
15 column, and for thereafter addressing the slave column in the process of lifting the object.

7. System as claimed in claim 6, wherein the identification can be read from an identification card associated with the master column.

20 8. System as claimed in claim 6 or 7, wherein the identification is a designation of the master column, an identification of the identification card, a random number generated for instance by the master column or a date and time designation generated by the system.

25 9. Method of selecting at least one lifting column in a system for lifting and lowering an object, such as a vehicle, the system comprising a group of at least two mobile lifting columns, each lifting column comprising: a displaceable frame with a standing mast part; a carrier displaceable along the
30 mast part for engaging the object to be lifted; a drive for moving the carrier along the mast part; a control for controlling at least the drive; and communication means communicating with at least other lifting columns in the

group via a transmission or broadcast path, the method comprising selection of at least one of the lifting columns in the group for a sub-group by selectively actuating user operable selection means, the method being characterised by
5 communicating, at least during selection of said lifting column for the sub-group on the basis of master-slave principles, and by initial selection of a first lifting column as a master lifting column for the sub-group.

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